

Study of the Factors affecting Success of Construction Project in Gujarat

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Abstract- The development and growth, particularly for developing countries depends on successful implementation of new projects. The construction industry in India is the second largest industry next to agriculture in terms of providing employment. The construction industry is dynamic in nature due to the increasing uncertainties in technology, budgets, and development processes. Unfortunately, some projects were completed successfully but some were not completed on time, over budget or being cancelled. Nowadays, building projects are becoming much more complex and difficult. The project team is facing unprecedented changes. The study of project success and the critical success factors (CSFs) are considered to be a means to improve the effectiveness of project.

Index terms- Survey Questionnaire, Data analysis, Ranking Method

INTRODUCTION

GENERAL:

The development and growth, particularly for developing countries depends on successful implementation of new projects. The construction industry in India is the second largest industry next to agriculture in terms of providing employment. The construction industry is dynamic in nature due to the increasing uncertainties in technology, budgets, and development processes. Unfortunately, some projects were completed successfully but some were not completed on time, over budget or being cancelled. Nowadays, building projects are becoming much more complex and difficult. The project team is facing unprecedented changes. The study of project success and the critical success factors CSFs are considered to be a means to improve the effectiveness of project.

AIMS & OBJECTIVES

- Identification of the critical factors that lead to project success in the Gujarat construction industry.
- Investigation of the most important critical success factors for Gujarat construction industry, based on accumulative knowledge and judgment of experts (owner/owner representative, consultant, and contractor) in the construction industry.

Problem Summary

The study of the project success and the CSF is considered to be a mean for improving the effectiveness of project. Thus the project managers need proper understanding of critical success factors and how to mitigate them. The purpose of this study is to systematically investigate the causes for project success. Constructions projects are frequently influenced by success factors. It can help construction companies to reach their intended goals with greater efficiency. Most of the critical success factors such as factors related to project manager's performance, factors related to organisation, factors related to project, factors related to external environment are likely to apparent from this study. This study ful to identify factors that influence project success.

Frame Work of Critical Success Factors

Cost factors	Time factors	Quality factors	Health, Safety & environment factors	Productivity factors	Client - related factors
A1: Market share of organization	B1: Site preparation time	C1: Unavailability of competent staff	D1: Safe condition of environment	E1: Project complexity	F1: Client's experience
A2: Liquidity of organization	B2: Planned time for construction	C2: Quality of equipment & raw materials	D2: Accidents occur	E2: Number of new project / year	F2: Owner's clear & precise definition of project scope & objectives
A3: Cash flow of project	B3: Percentage of orders delivered late	C3: Quality assessment system in organization	D3: Application of health & safety in organization	E3: Management labour relationship	F3: Timely decision by owner / owner's representative
A4: Profit rate of project	B4: Time needed to implement variation orders	C4: Quality training / meeting	D4: Air quality	E4: Absenteeism rate through project	F4: Client's emphasis on low construction cost
A5: Overhead percentage of project	B5: Time needed to rectify	C5: Conformance to specification	D5: Noise level	E5: Sequencing of work according to schedule	F5: Client's emphasis on high quality of construction
A6: Project design cost	B6: Average delay in claim approval		D6: Waste around site	E6: Information Coordination between owner & information parties	F6: Client's emphasis to achieve time limit
A7: Material & equipment cost	B7: Average delay in regular payments		D7: Climate condition	E7: Leadership skills for project manager	
A8: project labour cost				E8: Number of disputes between owner & project parties	
A9: project overtime cost					
A10: Cost of rework					
A11: Cost of variation orders					
A12: Waste rate of material					
A13: Regular project budget update					
A14: Escalation of material price					

N = total number of respondents

Frequency index:

The Factors Affecting Success of Construction Project of occurrence index method (FI) was used here to determine owners, consultants, and contractors perceptions of the frequency of the identified success factor.

$$FI = \sum a_i (n_i/N) * 100$$

FI = frequency index

a1, a2, a3, a4 = frequency occurrence

n1, n2, n3, n4 = No. of times factor repeat

CONCLUSION

Based on value of RII & FI we can rank the factor as per their importance and frequency of occurrence for completion of project successfully.

In accordance with the most important factors contractors should recommend the availability of material, equipment's and also quality of materials should be of a greater interest for contractors in order to improve cost, time, and quality performance. This can be done by applying quality training and meetings that are necessary for performing an improvement. Apparently the least important factors can prove to be guidelines for its consideration and effects on project success rate.

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SUMMARY OF EXPERT REVIEW

COST FACTORS	TIME FACTORS	QUALITY FACTORS	HEALTH, SAFETY & ENVIRONMENT FACTORS	PRODUCTIVITY FACTORS	CLIENT-RELATED FACTORS	CONTRACTOR RELATED FACTORS	RESOURCE RELATED FACTORS
A1: Market share of organization	B1: Site preparation time	C1: Availability of competent staff	D1: Safe condition of environment	E1: Project complexity	F1: Client's experience	G1: Trainee & experience team	H1: Land acquisition
A2: Liquidity of organization	B2: Planned time for construction	C2: Quality of equipment & raw materials	D2: Accidents occur	E2: Number of new project / year	F2: Owner's clear & precise definition of project scope & objectives	G2: Contractor client relationship	H2: Availability of construction material
A3: Cash flow of project	B3: Percentage of orders delivered late	C3: Quality assessment system in organization	D3: Application of health & safety in organization	E3: Management labour relationship	F3: Timely decision by owner / owner's representative	G3: Skill & experience of contractor	H3: Availability of equipment
A4: Profit rate of project	B4: Time needed to implement variation orders	C4: Quality training / meeting	D4: Air quality	E4: Absenteeism rate through project	F4: Sequencing of work according to schedule	G4: Contractor labour relationship	H4: Escalation of material
A5: Overhead percentage of project	B5: Time needed to rectify	C5: Conformance to specification	D5: Noise level	E5: Waste around site	F5: Client's emphasis on low construction cost		H5: Shortage of manpower
A6: Project design cost	B6: Average delay in claim approval		D6: Climate condition	E6: Information Coordination between owner & information parties	F6: Client's emphasis on high quality of construction		H6: Project labour cost
A7: project overtime cost	B7: Average delay in regular payments			E7: Leadership skills for project manager	F7: Client's emphasis to achieve time limit		
A8: Cost of rework				E8: Number of disputes between owner & project parties			
A9: Cost of variation orders							
A10: Waste rate of material							
A11: Regular project budget update							

METHODOLOGY

Relative importance index:

The Factors Affecting Success of Construction Project relative importance index method (RII) was used here in to determine owners, consultants, and contractors perceptions of the relative importance of the identified success factors.

$$RII = \sum w_i A_i X_i N$$

RII = relative importance index

W = weight given by the respondents (1 – 5)

A= highest weight (5)

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